DOCUMENT RESUME

ED 374 563 EA 026 142

AUTHOR Firestone, William A.; Wilson, Bruce L.
TITLE Administrative Behavior, School SES, and Student Achievement: A Preliminary Investigation.
INSTITUTION Research for Better Schools, Inc., Philadelphia, Pa.
SPONS AGENCY Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE Jul 89
NOTE 35p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Academic Achievement; *Administrator Effectiveness; Educational Administration; *Educational Environment; Elementary Secondary Education; Family Financial Resources; *Family Status; Principals; Socioeconomic Influences; *Socioeconomic Status

ABSTRACT

The school effects literature is replete with discussions of whether any factors, beyond socioeconomic status (SES), contribute to an explanation of student achievement. Recent attention has focused on the role of the school administrator. One argument is that a strong, controlling principal is a key to improved student performance. Another argument is that, through supportive efforts, administrators can facilitate teachers' work, which in turn affects student achievement. This paper presents findings of a study that examined two related issues--the administrative factors that influence student achievement and the effect of family SES on the working of those factors. Data were obtained from a survey of 175 elementary and 118 secondary southeastern Pennsylvania schools. Findings indicate that, independent of SES, supportive administrative behavior was positively associated with achievement at both the elementary and secondary levels. Tight administrative control over teaching was negatively associated with achievement, but only at the elementary level. In conclusion, school conditions do influence what students learn. Three figures are included. Appendices contain two statistical tables (LMI)

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ADMINISTRATIVE BEHAVIOR, SCHOOL SES, AND STUDENT ACHIEVEMENT: A PRELIMINARY INVESTIGATION

William A. Firestone
Rutgers University

Bruce L. Wilson
Research for Better Schools

July, 1989

The preparation of this paper was supported by funds from the U.S. Department of Education, Office of Educational Research and Improvement (OERI). The opinions expressed do not necessarily reflect the position or policy of OERI, and no official endorsement should be inferred.

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Abstract

The school effects literature is replete with discussions of whether any factors, beyond SES, contribute to an explanation of student achievement. Recent attention has focused on the role of the school administrator. One argument is that a strong, controlling principal is a key to improved student performance. Proponents of another perspective maintain that administrators cannot control instruction but through supportive efforts can facilitate teachers' work which in turn affects student achievement. This study explores these issues using data from 293 public schools. These findings indicate, independent of school SES, that supportive administrative behavior is positively associated with achievement at both the elementary and secondary levels. Tight administrative control over teaching is negatively associated with achievement, but only at the elementary level.

ADMINISTRATIVE BEHAVIOR, SCHOOL SES, AND STUDENT ACHIEVEMENT: A PRELIMINARY INVESTIGATION

Almost a decade ago, Bridges (1982) observed that researchers in educational administration showed little interest in identifying the administrative behaviors and organizational arrangements that contribute to student achievement. Since then, there has been some important work, (e.g. Rowan and Denk, 1984 and the empirical studies in the effective schools literature), but the volume of studies of the organizational antecedents to achievement continues to be low. One problem, of course, is that since the Coleman Report of 1966, a large body of research suggests that the most powerful factor shaping student learning is family SES (Parelius and Parelius, 1978). The impact of schooling is often small. This paper contributes to the literature on organizational antecedents to student learning by exploring two factors that are thought to be relevant: the balance of influence between teachers and the principal and principal support for instruction.

Administrative Behavior, Family SES, and Achievement

Two research questions are addressed herein: what administrative factors influence student achievement, and how does family SES affect the working of these factors?

Administrative Factors

The central administrative factors considered are the distribution of influence between teachers and the principal and the principal's support for teachers' work. Influence is an essential, universal aspect of organization to which every member must accommodate. It continues to play a major role in a variety of theories of organizations (e.g., Morgan, 1986; Tichy, 1983). Often used synonymously with the term power, influence is defined as the ability to induce others to behave in ways that they ordinarily would not (Dahl, 1957; Emerson, 1962). Thus, the concept has an important relative dimension. If one person wants to get someone else to do something, especially something the second person does not want to do, the first person must have more influence than the second.

There has been considerable debate about the balance of influence between the principal and teachers in schools. On the one side, a number of observers argue that the weakness of the formal hierarchy of authority leads to a "loosely coupled organization" in which the principal's influence is limited and teachers have considerable autonomy (Bidwell, 1965; Weick, 1976). Others point to a variety of constraints on teacher autonomy stemming from administrative decisions concerning curriculum, textbooks, the choice of testing programs, scheduling, and so forth that limit teacher autonomy and argue that the balance of influence is not so clear (Corwin & Borman, 1988). Moreover, the balance of influence varies. At a minimum, teachers have more influence in comparison to principals in secondary than elementary schools (Herriott & Firestone, 1984). Neither theory nor the available data provide clear guidance on how the balance of

influence will affect achievement. For instance, a number of arguments suggest that decentralization to give teachers more influence will promote achievement. Lack of influence over one's work, it is argued, is alienating, leading to withdrawl of effort (Seeman, 1975).

Where teachers have more influence, they are often more committed to it and to their school because they feel they have a greater opportunity to make a real contribution to its welfare (Firestone and Rosenblum, 1988). Moreover, when teachers have more influence, the focus of decision making is close to the information needed to make decisions (Weick, 1976). Because of day-to-day contact with students, teachers have more knowledge about what instructional needs are and what strategies will help them learn than someone from outside the classroom. Reducing administrative influence gives teachers the autonomy to act on that knowledge (Bidwell, 1965). Where teachers can adapt or modify schoolwide instructional programs on a class-by-class basis, student performance improves (Rosenholtz, 1985). When teachers can influence collective decisions about programs, the process helps clarify instructional purpose and method in ways that lead to increased instructional performance. Such participation reduces role ambiguity and uncertainty about what should be accomplished and how to achieve it (Mohrman, Cook, & Mohrman, 1979; Azumi & Madhere, 1983).

Together these observations suggest a first hypothesis about the relationship of influence to achievement:

> H1: Greater teacher influence in relation to that of the principal increases the quality of teaching which in turn promotes student achievement.

There are also arguments in the opposite direction. These arguements are most apparent in the "effective schools research." Edmonds' (1979: 22) early, provocative synthesis of this research suggests that effective schools have "strong administrative leadership" which "makes it clear that pupil acquisition of basic skills takes precedence over all other activities... [and creates] a climate of expectations in which no children are permitted to fall below minimum... levels of achievement." Other work supports this early conclusion. Wellisch, MacQueen, Carriere, and Duck (1978) find that in effective schools, principals exert more influence over decisions about instruction, the selection of materials, and schoolwide programs than do their colleagues in less effective schools. Effective principals also maintain academic standards and monitor student progress. Other studies suggest that principals in effective schools have the influence to coordinate school programs, promote consistent educational policies and practices, and develop schoolwide norms for high expectations (Clark, Lotto, & McCarthy, 1980: Venezky & Winfield, 1979; Murphy, Weil, Hallinger, & Mitman, 1982; Rutter, Maugham, Mortimore, Ouston, & Smith, 1979). Taken together these studies suggest a second hypothesis that is directly contradictory to the first:

H2: Greater principal influence in relation to that of teachers, increases the quality of teaching which in turn promotes achievement.

While there are disagreements on how influence should be distributed between teachers and the principal, there is more agreement on the importance of principal support to teachers. Teachers expect such support to be delivered (McPherson, 1979). Some support consists of "buffering" teaching from outside interference. Teachers expect principals to provide support with discipline and to help deal with difficult parents (Becker, 1952). The principal can also buffer the teaching activity by attending to material requirements, providing clerical assistance, mobilizing outside resources to help teachers with nonteaching tasks, and protecting their time in the classroom (Bossert, Dwyer, Rowan, & Lee, 1982). More generally, the principal can build up teachers' sense of importance as professionals and offer feedback and suggestions that will help them perform better (Gross & Herriott, 1965). Principals in especially effective schools do a great deal to facilitate the teacher's work (Rosenholtz, 1985). A wide range of literature suggests that whatever other contribution the principal makes, that person is well placed to facilitate the teachers' work in the classroom. Thus, a third hypothesis is:

H3: Principal support contributes to teaching quality which in turn facilitates student learning.

Family SES and Administration

Neither the balance of influence nor support may make any difference for student achievement if they are outweighed by the effects of students' family SES. Since the first Coleman report, one of the most consistent findings in educational research has been that family SES has a strong influence on student learning (Parelius & Parelius, 1978). This raises the question of whether schools have any effect on what students learn. It is now generally conceded that school-to-school variation has a real but small impact on student achievement (Murnane, 1981; Rowan, Bossert, & Dwyer, 1983). The quality, motivation, and behavior of teachers are clearly related to student achievement (Murnane, 1981), but can the same be said for principals? Changing principals does influence student achievement (Rowan & Denk, 1984). Moreover, Gross and Herriott (1965) found a positive effect of principal support on teachers even after controlling for family background. These studies suggest a broad hypothesis:

> H4: Administrative variables will influence teaching quality and student achievement when controlling for family SES.

Most of the research on school effects seeks to find a contribution of school variables when controlling for family SES, in effect putting school and family conditions in competition. Less attention has been given to identifying the effects of family SES on schooling processes. Yet, the open systems perspective on organizations suggests that such external inputs to schools should affect those processes (Scott, 1981).

Moreover, there is a long tradition of viewing managers as buffers who interpret the environment for the organization and protect the organization from the effects of external turbulence (Thompson, 1967). Certainly one contribution of principals to school functioning is to serve as such a buffer (Morris, Crowson, Hurwitz, & Porter-Gehrie, 1984).

There are some clues on how family SES affects internal processes in school. Teachers recognize the difficulty in working in low SES schools and seek to transfer out of them (Bruno & Dosher, 1981). For those who remain, teacher burnout is higher than in higher SES schools (Farber, 1984). There are also differences in principal behavior. Principal turnover has the greatest effect on student achievement in low SES schools (Rowan & Denk, 1984). Most important, Hallinger and Murphy (1986) find that principals in effective schools serving poorer families have more influence relative to teachers than their counterparts in schools serving a more well-to-do clientele.

Thus, the effect of family SES on student achievement may be mediated by how it affects what happens inside schools. This possibility suggests a final hypothesis:

H5: Family SES will affect the level of administrative variables.

Figure 1 summarizes these hypotheses graphically and shows how they relate to each other.

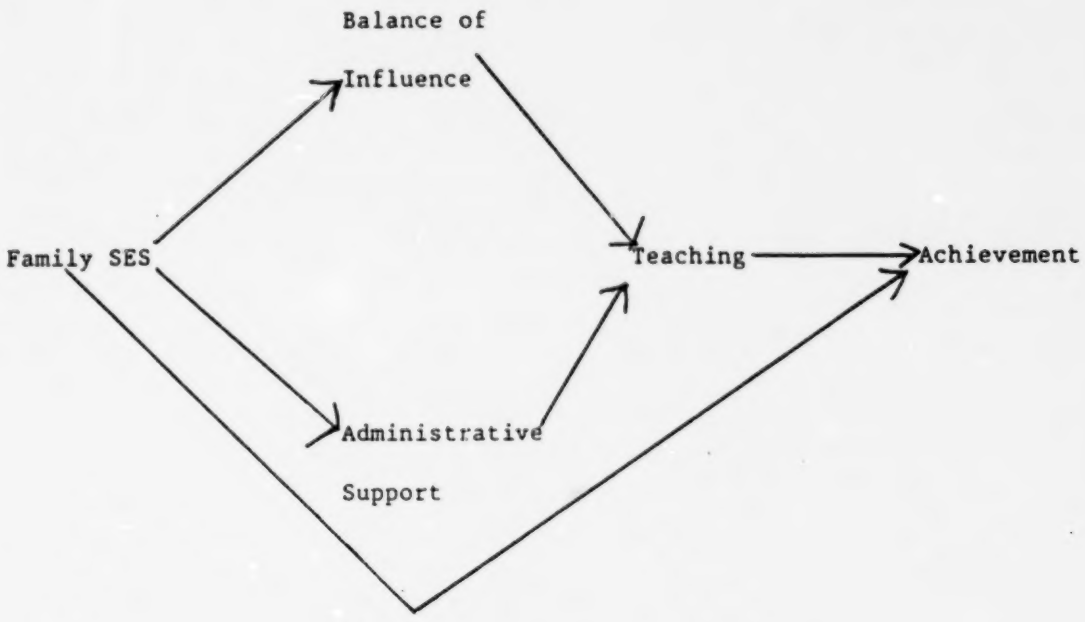

Figure 1: Model of relationships among family SES, administrative variables and achievement.

Data and Methods

Sample

The data for this preliminary investigation are aggregated school-level measures from 293 schools that have administered a survey designed to measure a variety of school climate and organizational conditions (Wilson, 1985). The schools were all volunteers. All of the schools expressed an interest in school improvement, and more specifically wanted to use school climate data as one diagnostic tool in the improvement process. Some of the sample schools were part of a staff development training program offered by a regional educational laboratory while others became involved after reading about the program in Educational Leadership (Wilson, 1985), a widely read practitioner journal. In some cases, all schools in a district participated at the request of the superintendent, but in the majority of cases individual schools administered the survey at the initiative of the principal or teachers.

While the 293 schools were not randomly selected, they are very similar to a random sample of 50 schools drawn from 15 counties in Southeastern Pennsylvania where an earlier version of the survey instrument was administered (Herriott & Firestone, 1984). Statistical tests commparing results from the two samples on basic characteristics of size ($t=0.18$; $p=.85$) and level($X^2=0.15$; $p=.69$) suggest that the random sample (N=50) and the larger sample (N-293) used in this survey are from the same population. In addition, a Box test of the equality of covariance matrices was computed for the two operational variables (balance of influence and principal support) common to both this sample

and the random sample of 50 schools. The M-statistic resulting from a comparison of the two two-variable covariance matrices produced a non-significant F-ratio of 2.20, suggesting that this volunteer sample of 293 schools and the random sample of 50 are part of a common population.

The statistical comparisons cited above provide evidence that the sample is not biased in any significant way. If there is a bias, it is that these schools are more oriented to change or improvement than the general population of schools as witnessed by their voluntary participation in the use of an organizational climate survey as a needs sensing device. This should not have any direct impact on the hypothesized relationships outlined above.

Separate questionnaires were administered to the principals and teachers in the schools. All principals completed the questionnaires as did an average of 86 percent of the teachers in each school.

The 293 schools include 175 elementary schools (students enrolled primarily in grades K-8) and 118 secondary schools (students enrolled primarily in grades 7-12). These two levels of schooling reflect important differences. Secondary schools are larger, more complex, less centralized, and subject to different political pressures from elementary schools (Cohen & Neufeld, 1981; Herriott & Firestone, 1984). Firestone and Herriott (1982) suggest that the differentiated structure of secondary schools makes them more like complex organizations while elementary schools are more like small groups. Because it is not clear how these

differences might affect principal behavior, separate analyses were conducted at each level.

Measurement

This paper employs the "Hall" approach to organizational measurement, named after the work of Hall (1963). This approach measures organizational characteristics with a survey that treats the respondent as an informant rather than a subject. It has been used extensively in previous research. Examples include the work of Corwin and Herriott (1988) and Hage and Aiken (1970) among others. In this case, the unit of analysis is the school rather than the individual. Respondents are asked to describe organizational characteristics. Since each person sees only part of the phenomenon in questions, no individual's response provides a complete picture. However, triangulation is achieved by comparing responses from the same organization. If there is substantial agreement, then a major component of the responses is assumed to reflect organizational reality. Technically, each individual's response to an item can be partitioned into one portion that reflects organizational reality and another that reflects individual perception. Analysis of variance using the organization as the "treatment" accomplishes this partitioning and also serves as a test of the validity of using the item as an organizational measure. Where there is a significant among-organizations effect, the item is measuring an organizational phenomenon. That component is then captured by using the mean for all respondents within the organization as a measure of the organizational phenomenon (Gross & Herriott, 1965).

Information on family background (SES) comes from the principal questionnaires. The principals were asked to report on the percent of students eligible for free lunch. Since this is a figure required by state reporting requirements, it was assumed that this would be more accurate than reports on family income, education, or occupation.

The two measures of principal behavior, the teaching behavior variable, and the student achievement measure come from the School Assessment Survey (SAS), a questionnaire completed by the teaching staff at each school. Teachers were asked to act as informants about the school as an organization. Individual questionnaire items were aggregated to the school level, with multiple items then combined to form empirical indicators of the concepts presented in the earlier discussion. A five step process was followed in creating these school-level empirical indicators. First, sets of items that represent examples of each concept in question were drafted. These were piloted on a range of teachers.

After a large sample of schools had administered the instrument, the second step involved identifying items that differentiated among schools. Analysis of variance was the empirical test selected to ascertain whether teachers agreed enough about their school for a mean score to be a valid measure. To the degree that there was more between than within school variation, an item was retained for further analysis. F statistics for the items used in this analysis were all significant with Eta-squared coefficients averaging .20.

The third and fourth steps assessed the coherence of groups of items at the school level thought to be associated with the concept (e.g. principal support). The third step involved an assessment of the school-level correlation matrix for all the items representing each concept. Items were eliminated where correlations were low (lack of coherence) or very high (redundancy). Correlation coefficients were in the range from .2 to .8 with most from .4 to .6. Cronbach's alpha coefficient (1951) was computed as the fourth step. This coefficient measures the internal consistency or homogeneity among the items. Alphas for the four measures ranged from .83 to .96.

As a final step, the associations of items within each measure of a concept were compared with their associations with items representing other concepts. A set of items represents a valid measure of a concept to the extent that the within-concept correlations exceed those between concept correlations (Dewar, Whetter, & Boje, 1980). On average, the within-concept correlations were two and a half times larger than the between-concept correlations, indicating convergent and discriminant validity of the measures. More detailed technical information about the creation of these school-wide variables is presented in Wilson, Firestone, and Herriott (1985).

The "balance of influence" measure (BIN) is the same measure used by Herriott and Firestone (1984) and Corwin and Herriott (1988). It assesses the extent to which the principal has authority over classroom instructional activities relative to teachers. In schools where principals are reported to have high influence relative to teachers, the

balance of influence score is positive. Conversely, in situations were teachers have more influence than the principal, the score is negative. The questionnaire asked teachers to report how much influence they have as a group and how much the principal has over the following issues:

- selecting required texts,
- determining course objectives,
- deciding on daily activities,
- determining the concepts taught each day and,
- identifying types of educational innovations to be adopted.

These were designed to assess a range of issues closely related to instruction. The response choices were on a four point scale from 0 = no influence to 3 = major influence. The teachers' perception of their own influence was subtracted from their perception of the principal's influence to obtain the measure of balance of influence that ranged from -3 (high teacher influence) to +3 (high principal influence).

The principal support items (SPT) overlap significantly with those in the Gross and Herriott (1965) executive professional leadership measure. Teachers were asked how often the principal does each of the following:

- treats teachers as professional workers,
- gives teachers the feeling that their work is "important,"
- offers constructive suggestions about dealing with major problems,
- gives teachers the feeling their work is important, and
- makes meetings a valuable professional activity.

These items had a six-point scale from 0 = never to 5 = always.

The teaching measure (TCH) does not begin to capture the full range of that complex activity. No survey items could ever accomplish that. It is more limited in design, attempting to assess two aspects of teaching on which peers could make judgments. These include the extent to which teachers do more than the minimum required of them and whether they have high expectations for students by teaching to all students in a class rather than a select few. This variable follows closely the concept measured by Brookover, Beady, Flood, Schweitzer, & Wisenbacker (1979). Each teacher was asked what percent of his or her colleagues:

- encourage students to work at a higher level than students have worked in the past,
- give as much attention to the slower students as to the brighter ones,
- encourage all students to participate actively in academic activities,
- provide opportunities for students to go beyond the minimum demands of assigned work, and try new teaching methods.

Individuals responses could range from 0 percent to 100 percent.

The measure of student achievement (ACH) comes from teacher reports. Teachers were asked what percent of the students they currently teach:

- are one or more years behind grade level in reading ability,
- are not interested in academic achievement,
- do not work up to their intellectual capabilities,
- were not adequately prepared to do the grade level work expected when they entered the class, and
- are not mastering the subject matter of skills taught at a minimum satisfactory level.

The response could vary from 0 to 100 percent. These items were reverse scored so that a high score indicates high student achievement.

It is acknowledged that teacher perceptions of student achievement are not as satisfactory as actual achievement results. However, with as diversified a sample as this one, a variety of different standardized tests have been adopted by the participating schools. It is not technically feasible to standardize the wide range of commercial tests used in these schools to a common metric (Angoff, 1971). A useful alternative is to substitute teacher perceptions since Hopkins, George and Williams (1985) report a high degree of correspondence between teacher perceptions and achievement test data. Furthermore, as an independent test of the correspondence between teacher perceptions of student achievement and standardized achievement results, the authors asked a sample of teachers from very high (N=14) and low achieving schools (N=13) in a large urban district to respond to the perceptual achievement questions. These schools were chosen for the consistency in their performance (four years of results at least one standard deviation above or below the district mean on the same standardized test) after controlling socio-economic characteristics. A chi-square coefficient of 8.39 (P=.004) reinforces the appropriateness of using these teacher reports as a surrogate for actual student achievement.

Analysis

The relationships among the variables as depicted in the hypothesized model (see Figure 1) are tested using multiple regression techniques with path coefficients indicating the strength of the relationship. Only paths that are significant beyond the .05 level are reported in the model. Results of analyses are presented separately for elementary schools (Figure 2) and secondary schools (Figure 3).

Descriptive statistics for each of the variables in this analysis, as well as the correlation matrix are provided in Appendix A.

Before describing specific findings about the relationship of the two administrative variables to student achievement, it is first necessary to turn to the issue of whether those variables have any effect after controlling for family SES (hypothesis 4). SES does have the strongest effect on ACH at both the elementary (R^2=.52) and secondary levels (R^2=.45). Nevertheless, both balance of influence (BIN) and principal support SPT show significant effects on achievement (ACH) at the elementary level and SPT has an indirect effect mediated through teaching behavior (TCH) at the secondary level. The overall proportion of variance explained by adding the two administrative behaviors is significantly higher than when SES is in the equation by itself. At the elementary level the variance explained (R^2) increases from .52 to .61 and at the secondary level the figures change from .45 to .49. Thus, hypothesis 4 receives some support, and there is reason to explore the other hypotheses.

Evidence for hypotheses 1 and 2 about the relationship between the balance of influence and achievement is quite different at the two levels. BIN has a significant effect on ACH at the elementary level (Figure 2). The negative sign suggests that stronger teacher influence in relation to the principal promotes achievement, thus supporting the first hypothesis. It should be noted, however, that the balance of influence was hypothesized to work indirectly though teaching rather than directly as is the case in this analysis. At the secondary level (Figure 3), BIN has no effect on ACH either directly or indirectly, so no support is offered for either hypothesis.

Figures 2 and 3 about here

By contrast, hypothesis 3, that principal support will improve teaching which in turn will contribute to achievement, is supported at both levels. SPT positively affects TCH which in turn contributes to ACH. In addition, SPT has a direct effect on ACH at the elementary level.

The final hypothesis concerns the effect of family SES on administrative variables. At the elementary level, SES increases SPT and decreases BIN suggesting that principals in more affluent schools provide more support to teachers and share influence more. Thus, the hypothesis is supported. In addition, there is a direct positive relationship between SES and TCH. At the secondary level, SES is negatively associated with BIN (i.e. more affluent schools report more shared influence), but has no effect on SPT. Thus, some support is provided for the hypothesis.

Discussion

This study sets out to explore the relationships among family SES, administrative variables, and student achievement. The findings contribute to the line of research which maintains that what happens in school does influence what students learn. While it is easier to demonstrate effects of teacher behavior on student achievement, even less direct factors--like the work of administrators--affects learning in measurable ways. Thus, this study reinforces the work of the last decade or more which finds that school conditions do influence what students learn.

However, most of the discussion of family SES and school characteristics put the two factors into competition to see which has the greatest effect. In fact, family SES can influence school conditions associated with clienteles from varying socioeconomic backgrounds. This study suggests that elementary principals exercise more influence and provide less support to teachers in schools with a lower family SES. Thus, family SES is not only independent of school factors, but it also contributes to the very internal conditions that mitigate against achievement.

There are a number of possible reasons for these associations. First, since teachers leave low SES schools more rapidly than those with a more affluent clientele (Bruno & Doscher, 1981), greater principal influence may be necessary to maintain the continuity that is not sustained by a stable staff who can share decision-making responsibility and know the

local context. Second, the problem of order may be stronger in lower SES schools. The centralization of principal influence over teaching may reflect a general tightening up in these schools, and the principal may spend too much time with disciplinary issues to offer adequate support. Finally, parents and other external groups may have greater confidence that high SES schools will perform adequately. Doubts that low SES schools can achieve at higher levels may create pressures to "do something," to which centralization is a response. Moreover, if teachers are blamed for poor performance, control may replace support as a way of dealing with them.

With regard to the question of what principals can do to contribute to student achievement, this study reinforces the view that principals contribute most by supporting teachers' efforts (Gross & Herriott, 1965) and giving them the autonomy to adjust to in-class and over-time variation in student ability (Bidwell, 1965). These findings must be interpreted in light of earlier research which suggests that what teachers do is most central to what students learn (Murnane, 1981) and that the principal's job is to help teachers do their work better (Rosenholtz, 1985).

The effect of support is consistent at both the elementary and secondary level and appears fairly straightforward in light of this view of the key role of the teacher. The relationship between the balance of influence and achievement at the elementary level is somewhat more difficult to understand. Why is this relationship not mediated through the quality of teaching? One possibility that is consistent with Bidwell's interpretation is that the important source of information for decisions about teaching is the child. Giving teachers more influence places

decisions closer to the information. Thus, teachers with more relative influence may not put more effort into their work or attend more to students at all ability levels--the elements of teaching measured by this variable--but the quality of instruction may still be better. Another possibility is that the balance of influence measure actually reflects a more general climate of autonomy and self-determination. In people-processing organizations like schools, students and other clients may be highly sensitive to this climate. A general emphasis on repression and control can inhibit development and growth while a more open climate permits more student development.

One finding that was not anticipated when this research was initiated is the greater density of the "casual map" for elementary schools than that for secondary schools. All three school characteristics have a greater influence on achievement in the lower grades, but those variables are generally more sensitive to family SES as well. While this issue deserves further study, two possible explanations can be advanced. The first refers to the maturation of students, broadly conceived. Secondary students have simply experienced more school. Lower SES students have already begun to fall behind, and their attitudes towards school may well reflect past treatment (Fine, 1986). They will also have been tracked in ways that affect their current learning (e.g. Gamoran, 1987). Past experiences and sorting effects may make them less sensitive to the current overall school environment.

The second explanation refers to the formal structural differences between elementary and secondary schools. Secondary schools are larger,

departmentalized, and have more complex administrative components. While the typical elementary school has only one principal, the secondary principal is supported by assistant principals, deans, disciplinarians, and administrative assistants as well as counselors and department heads. All these individuals take on some tasks performed by the elementary principal. They may have more direct contact with students and parents than the principal. These roles insulate the high school principal more from the student body and community environment than is the case for elementary principals. If so, it is not surprising that the high school principal is not as responsive to a part of the environment to which that office is not especially sensitive.

Two important limitations to this study must be noted. First, some of our concepts could be better measured. This is particularly true of student learning. While our perceptual measure behaves similarly to those based on student achievement tests, actual achievement data would present a stronger case. Collection of such data was precluded by the many achievement tests used by the different schools in the study. It would also have been preferable to use a wider range of teaching measures. However, those that are most comprehensive depend upon direct observation in the classroom which is prohibitive when examining classrooms in nearly three hundred schools. In addition it would be helpful to measure other aspects of the environment then family SES. For instance, Ogawa (1984) suggests that administrators are especially sensitive to the political environment created by state and federal legislation. To date, effective measures of the political environment have not been developed.

Second, it would be useful to pursue the issues raised by this study using a longitudinal design. As in all regression analyses using one-time data, the causal order of variables for this analysis is justified on theoretical grounds and cannot be tested empirically. Longitudinal data would provide the opportunity to assess the direction of the relationships among family SES, administrative variables, and student achievement. This would have allowed us to explore the possibility that student achievement has feedback effects on administrative actions.

Additional research is needed to clarify the relationship between administrative behavior and student achievement. Still, this study suggests that such behavior does make a difference to students and that in spite of the recurring fascination with issues of power and authority in the study of school administration (Abbott & Caracheo, 1988), tight administrative control over teaching does not promote student achievement.

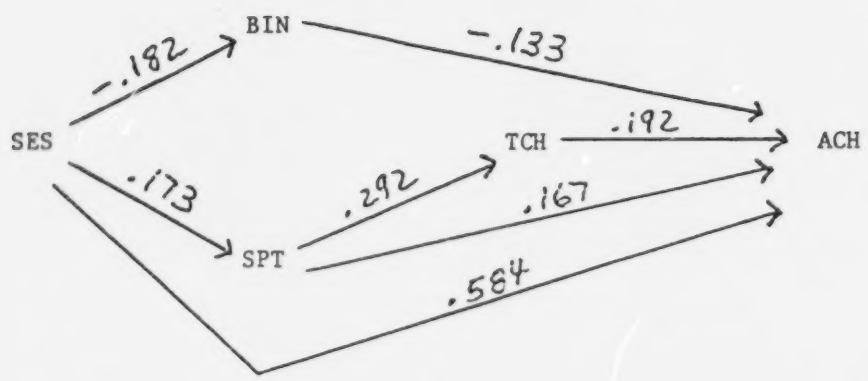

Figure 2: Path analysis of effects of SES, centralization, support and teaching on achievement in elementary schools (N=175).

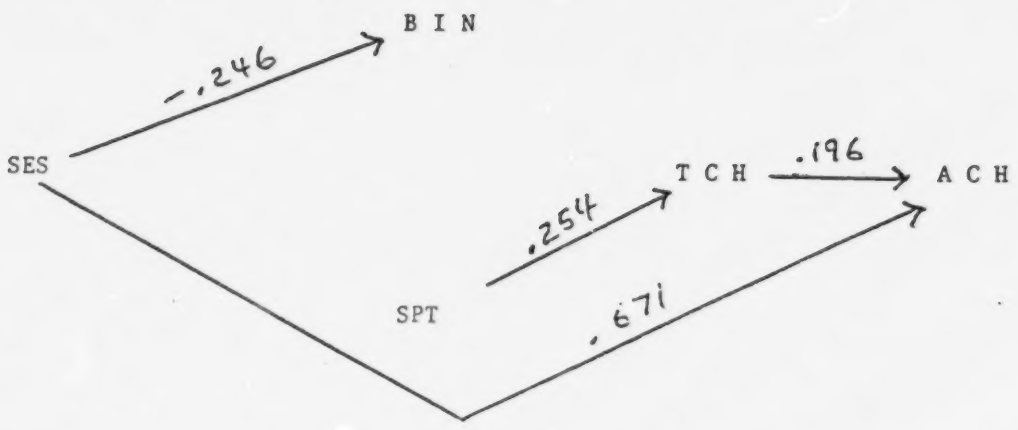

Figure 3: Path analysis of effects of SES, centralization, support and teaching on achievement in secondary schools (N=118).

Appendix A

Elementary Schools

(N=175)

	SES	TCH	BIN	SPT	ACH	$\bar{X}$	S.D.
SES	--	.44*	-.20*	.17*	.72*	64.2	29.4
TCH		--	-.01	.39*	.49*	78.5	8.67
BIN			--	-.06	-.23*	-0.82	0.37
SPT				--	.31*	3.84	0.65
ACH					--	75.8	10.2

*$P \leq .05$

Secondary Schools

(N=118)

	SES	TCH	BIN	SPT	ACH	$\bar{X}$	S.D.
SES	--	-.01	-.25*	-.04	.67*	74.8	22.4
TCH		--	.16*	.27*	.25*	67.4	6.37
BIN			--	.14	-.20*	-1.32	0.39
SPT				--	.16*	3.39	0.64
ACH					--	63.5	10.7

* $P \leq .05$

REFERENCES

Abbott, M. G., & Caracheo, F. (1988). Power, authority and bureaucracy. In N. J. Boyan (Ed.), Handbook of Research on Educational Administration. New York: Longman.

Angoff, W. H. (1971). Scales, norms and equivalent scores. In R. L. Thorndike (Ed.), Educational Measurement, Second Edition. Washington, DC: American Council on Education.

Azumi, J. E. & Madhere, S. (1983). Professionalism, power, and performance: The relationships between administrative control, teacher conformity, and student achievement. Paper presented at the annual meeting of the American Educational Research Association, Montreal, April 1983.

Becker, H. S. (1952). The career and the Chicago public school teacher American Journal of Sociology, 57 (5), 470-77.

Bidwell, C. E. (1965). The school as a formal organization. In J.G. March (ed.), Handbook of organizations. Chicago: Rand McNally.

Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. Educational Administration Quarterly, 18 (3), 12-33.

Bridges, E.M. (1982). Research on the school administrator: The state of art, 1967-80. Educational Administration Quarterly, 18 (3), 12-33.

Brookover, W., Beady, C., Flood, P., Schweitzer, J., & Wisenbacker, J. (1979). School systems and student achievement: Schools can make a difference. New York: Praeger.

Bruno, J. E., & Doscher, M. L. (1981). Contributing to the harms of racial isolation: Analysis of requests for teacher transfers in a large urban school district. Educational Administration Quarterly, 19(5): 533-546.

Clark, D.L., Lotto, L.S., & McCarthy, M.M. (1980). Factors associated with success in urban elementary schools. Phi Delta Kappan, 61 (7), 467-470.

Cohen, D. K. & Neufeld, B. (1981). The failure of high schools and the progress of education. Daedalus, 110 (3), 69-80.

Corwin, R.G. & Borman, K.M. (1988) School as workplace: Structural Constraints on Administration. In N. Boyan (Ed.) Handbook of research on educational administration. New York: Longman.

Corwin, R., & Herriott, R.E. (1988). Occupational disputes in mechanical and organic social systems: An empirical study of elementary and secondary schools. American Sociological Review, 5 (4), 528-43.

Cronbach, L.J. (1950). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 297-334.

Dahl, R.A. (1957). The concept of power. Behavioral Science, 2, 201-28.

Dewar, R.D., Whetten, D.A. & Boje, D. (1980). An examination of reliability and validity of the Aiken and Hage scales of centralization, formalization and task routineness. Administrative Science Quarterly, 25 (1), 120-128.

Edmonds, R. (1979). Effective schools for the urban poor. Educational Leadership, 37(1): 15-24.

Emerson, R.M. (1962). Power-dependence relationships. American Sociological Review, 27(1), 31-41.

Farber, B. A. (1984). Teacher burnout: Assumptions, myths, and issues. Teachers College Record, 80(2), 321-328.

Fine, M. (1986). Why urban adolescents drop into and out of public high schools. Teachers College Record, 87(3), 393-409.

Firestone, W. A., & Herriott, R. E. (1982). Prescriptions for effective elementary schools don't fit secondary schools. Educational Leadership, 40(3), 51-53.

Firestone, W. A., & Rosenblum, S. (1988). Building commitment in urban high schools. Educational Evaluation and Policy Analysis, 10 (4), 285-300.

Gamoran, A. (1987). The stratification of high school learning opportunities. Sociology of Education, 60 (3), 135-155.

Gross, N., & Herriott, R. E. (1965). Staff leadership in public schools. New York: Wiley.

Hage, J. & Aiken, M. (1970). Social change in complex organizations. New York: Random House.

Hall, R.H. (1963). The concept of bureaucracy. American Journal of Sociology. 69(1), 32-40.

Hallinger, P., & Murphy, J. F. (1986). The social context of effective schools. American Journal of Education, 94(3), 328-355.

Herriott, R. E., & Firestone, W. A. (1984). Two images of schools as organizations: A refinement and extension. Educational Administration Quarterly, 20(4), 41-57.

Hopkins, R. D., George, C. A. & Williams, D. D. (1985). The concurrent validity of standardized achievement tests by content area using teachers' rating as criteria. Journal of Educational Measurement, 22(3), 177-182.

McPherson, G.H. (1979). What principals should know about teachers. In D.A. Erickson and T.R. Relker (Eds.), The principal in metropolitan schools. Berkeley, CA: McCutchan.

Mohrman, A. M., Cooke, R. A. & Mohrman, S. D. (1979). Participation in decision making: A multidimensional perspective. Educational Administration Quarterly, 15(3), 97-113.

Morgan, G. (1986). Images of organization. Beverly Hills: Sage.

Morris, V., Crowson, R. L., Porter-Gehrie, C., & Hurwitz, E. (1984). Principals in action: The reality of managing schools. Columbus, OH: Charles Merrill.

Murnane, R. J. (1981). Interpreting the evidence on school effectiveness. Teachers College Record, 83(1), 19-36.

Murphy, J., Weil, M., Hallinger, P. & Mitman, A. (1982). Academic press: Translating high expectations into school policies and classroom practices. Educational Leadership, 40(3), 22-26.

Ogawa, R. T. (1984). Teachers and administrators: Elements of the information processing repetoires of schools. Educational Administration Quarterly, 20(2), 5-24.

Parelius, A., P., & Parelius, R. J. (1978). The sociology of education. Englewood Cliffs; NJ: Prentice-Hall.

Rosenholtz, S. J. (1985). Effective schools: Interpreting the evidence. American Journal of Education, 93(3), 352-388.

Rowan, B., & Denk, C. E. (1984). Management succession, school socioeconomic context, and basic skills achievement. American Educational Research Journal, 21(3), 517-538.

Rowan, B., Bossert, S. T., & Dwyer, D. C. (1983). Research on effective schools: A cautionary note. Educational Researcher, 12(4), 24-31.

Rutter, M., Maughan, B. Mortimore, P., Ouston, J., & Smith, A. (1979). Fifteen thousand hours: Secondary schools and their effects on children. Cambridge, MA: Harvard University Press.

Scott, W. R. (1981). Organizations: Rational, natural, and open systems. Englewood Cliffs, NJ: Prentice-Hall.

Seeman, M. (1975). Alienation studies. In A. Inkeles, J. Coleman, & N. Smelsar (Eds.) Annual Review of Sociology, v.1, Palo Alto, CA: Annual Reviews.

Thompson, J. D. (1967). Organizations in action. New York: McGraw-Hill.

Tichy, N. (1983). Managing strategic change: Technical, political, and cultural dynamics. New York: Wiley.

Venezky, R. L. & Winfield, L. F. (1979). Schools that succeed beyond expectations in reading (Studies on Education Technical Report no. 1). Newark, DE: University of Delaware.

Weick, K. E. (1976). Educational organizations as loosely coupled systems. Administrative Science Quarterly, 21, 1-19

Wellisch, J. B., MacQueen, A. H., Carriere, R. A., & Duck, G. A. (1978). School management and organization in successful schools (ESAA an indepth study of schools). Sociology of Education, 51(3), 211-226.

Wilson, B. L. (1985). The school assessment survey. Educational Leadership, 42(6), 50-53.

Wilson, B. L., Firestone, W. A., & Herriott, R. E. (1985). The school assessment survey: A technical manual. Philadelphia: Research for Better Schools.